

Office Action Summary

Application No.

10/676,312

Applicant(s)

PAN ET AL.

Examiner

PRABODH M. DHARIA

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/22)
Paper No(s)/Mail Date _____
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 04-07-2010.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Supplemental Office Action

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Applicant's Amendment dated January 31, 2009 in response to USPTO Office Action dated December 15, 2008.

The amendments to claim 1 and Applicant's remarks have been noted and entered in the record. This is a Non-Final office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al. (USP 7,312,820) in view of Wood (USP 6,288,695) and Matsushima (USP 5,976,086).

Regarding claim 1, Zimmermann et al. teaches a method and apparatus for providing virtual processing effects for wide-angle video images (col. 1, lines 65-67 and col. 2, lines 1-49); Zimmermann et al. further teaches a method of modifying a video image comprising a plurality of sequential frames to be displayed on a display;

receiving at least a portion of a current frame of said video image (col. 2, lines 18-21 and col. 8, Claim 1).

Zimmermann et al. does not teach modifying said current frame to alternatively increase or decrease the luminance output of a portion of said display corresponding to a pixel of said current frame, by overdriving a voltage to said portion to a current value automatically selected based upon: (i) at least one predicted displayed luminance value of said pixel in respective ones of at least one subsequent frame of said video image; and (ii) at least one previously displayed luminance value of said pixel in respective ones of at least one previous frame of said video image.

Wood teaches a method for driving an addressable matrix display with luminescent pixels and display apparatus using the method (col. 3, lines 23-43); Wood further teaches modifying said current frame to alternatively increase or decrease the luminance output of a portion of said display corresponding to a pixel of said current frame, by overdriving a voltage to said portion to a current value automatically selected (col. 6, lines 2-4).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Zimmermann et al. the feature as taught by Wood in order to put in place the means to alter the intensity of a pixel or portion of a display panel as required.

Zimmermann et al. taken with Wood does not teach a current value automatically selected based upon (i) at least one predicted displayed luminance value of said pixel in respective ones of at least one subsequent frame of said video image; and (ii) at least one

previously displayed luminance value of said pixel in respective ones of at least one previous frame of said video image.

Matsushima teaches an ultrasonic diagnostic apparatus to obtain sequential frames of image data (col. 9, lines 50-67, col. 10, lines 1-67 and col. 11, lines 1-4); Matsushima further teaches a current value automatically selected based upon (i) at least one predicted displayed luminance value of said pixel in respective ones of at least one subsequent frame of said video image; and (ii) at least one previously displayed luminance value of said pixel in respective ones of at least one previous frame of said video image (col. 9, lines 32-36).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Zimmermann et al. taken with Wood the feature as taught by Matsushima in order to consider the luminance values of a pixel from a subsequent frame and a previous frame to influence the luminance value of the current pixel.

Relative to claim 2, Zimmermann et al. taken with Wood in view of Matsushima does not specifically teach wherein at least one previously displayed luminance value of a pixel is stored in a respective frame buffer; said feature being in common practice in the manipulation of data being processed for display. because this step is in common practice and well known in the art, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include this step in the method steps as taught by Zimmermann et al. taken with Wood in view of Matsushima .

Allowable Subject Matter

4. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 3, the major difference between the teachings of the prior art of record (USP 7,312,820, Zimmermann et al.; USP 6,288,695, Wood, and USP 5,976,086, Matsushima) and that of the instant invention is that said prior art does not teach the method where a first previously displayed luminance value is at a state where liquid crystal material associated with said pixel of said display is not at an equilibrium state, and where a second said previously displayed luminance value is at a state where said liquid crystal material associated with said pixel is at an equilibrium state, and where said second said previously displayed luminance value is from the earliest said at least one frame, upon which selection of said current value is based.

5. Claim 4 is allowed.

6. The following is an examiner's statement of reasons for allowance:

Relative to claim 4, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art does not teach a method of modifying an image to be displayed on a display; (a) receiving at least a portion of said image; and (b) modifying said image to alternatively increase or decrease the luminance output of a pixel of said image by overdriving said pixel to a current value that is elected based upon: (i) at least one predicted displayed luminance value of said pixel in respective ones of at least one subsequent frame of said image; and (ii) at least one

previously displayed luminance value of said pixel in respective ones of at least one previous frame of said image, wherein said at least one previously displayed luminance value of said pixel is stored in a respective frame buffers; where (c) a first said previously displayed luminance value is at a state where liquid crystal material associated with said pixel of said display is not at an equilibrium state, and where a second said previously displayed luminance value is at a state where said liquid crystal material associated with said pixel is at an equilibrium state, and where said second said previously displayed luminance value is from the earliest said at least one frame, upon which selection of said current value is based.

Response to Applicant's Remarks

7. Applicant's remarks regarding claims 1 and 2 are rendered moot in light of the introduction of new prior art introduced in the rejection of said claims 1 and 2.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pub. No.	2003/0006949	Sekiya et al.
Pub. No.	2002/0024017	Overdick et al.

To Respond

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINCE E. KOVALICK whose telephone number is (571)272-7669. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vincent E Kovalick/
Examiner, Art Unit 2629
February 18, 2010

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629